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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,497

12/10/2003

Kazunori Shimazaki

5000-5135

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7590

11/28/2006

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EXAMINER

WEISKOPF, MARIE

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,497

Applicant(s)

SHIMAZAKI ET AL.

Examiner

Marie A. Weiskopf

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/13/06 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuriya et al (EP 1,123,844 A1) in view of Okamoto (US 2003/0045973).

- In regard to claim 1, Kuriya et al discloses a parking assisting device with which a driver parks a vehicle into a target parking space by performing driving operations in accordance with guidance information (Abstract), comprising:
 - Image capturing means for capturing at least an image behind the vehicle (Page 3, paragraph 13)
 - A monitor arranged near a driver seat of the vehicle for displaying the image obtained by the image capturing means (Page 3, paragraph 13)

- Yaw angle detecting means for detecting a yaw angle of the vehicle (Page 3, paragraph 10)
- Guiding means for outputting the guidance information regarding the driving operations to the driver (Page 4, paragraphs 19-20)
- A controller for:
 - Providing the guidance information for guiding a parking path to the target parking space by driving the vehicle while maintaining a predetermined steering angle via the guiding means (Page 3, paragraphs 22-24). Kuriya et al discusses maintaining a predetermined steering angle and having line segments showing the position of the rear bumper if kept at the steering angle at different distances (Figure 3).

Further, Kuriya discloses the controller displaying on the monitor at least one of a predicted path and a predicted parking position on the parking path guided by the guidance information so as to overlap the image obtained by the image capturing means to enable the driver to confirm whether or not the vehicle can be parked into the target space by continuing the driving operations in accordance with the guidance information. (Page 4, paragraphs 22-24) Kuriya et al discusses showing the rear bumper where the vehicle reverses by one meter, 1.5 meters, 2.5 meters. This would be a predicted parking position for the vehicle and also a predicted parking path for the vehicle. (Figures 3A-3F) Kuriya, however, fails to disclose determining a predetermined parking path to the target parking space, displaying on the monitor a predetermined

parking path and a predetermined predicted parking position on the parking path guidance information. Okamoto, however, discloses both of these. Okamoto discusses superposing on the display screen a predicted vehicle route image generated within a predetermined area and an actual vehicle route image. (Paragraph 43) Okamoto also discloses when the parking switch is on, the desired parking area is confirmed in a rear area of the image. The vehicle image positioning switch moves a vehicle image to the desired position, which would be a predetermined predicted parking position.

(Paragraph 57) It would have been obvious to one having ordinary skill in the art at the time of the invention to include the predetermined parking path and predetermined parking position as taught by Okamoto with the invention as discussed by Kuriya in order to provide a system which would easily allow the user to be able to determine if the vehicle will indeed be able to park in the space provided. It also would have been obvious to one having ordinary skill in the art at the time of the invention to use the yaw angle detecting means as taught by Kuriya with the invention as discussed by Okamoto to compare a pre-set prescribed yaw angle for the predetermined parking path with the actual yaw angle since Okamoto discusses being able to give the user a predicted path and the actual path.

- In regard to claim 2, Kuriya discloses wherein the controller calculates at least one of the predicted path and the predicted parking position of the vehicle to display it on the monitor when the driver operates the vehicle in accordance with the guidance information. (Page 4, paragraph 26)

- In regard to claim 3, Kuriya discloses wherein the controller displays at least one of the predicted path and the predicted parking position of the vehicle, both being set in advance, when the driver operates the vehicle in accordance with the guidance information. (Page 4, paragraph 26; Page 10, paragraph 74 – page 14, paragraph 104) Kuriya et al discusses backing up the vehicle until the target point overlaps with the steering start guide line and then it is possible to judge that the position is the space where the vehicle will be parked. (Figures 7A-7E)
- In regard to claim 4, Kuriya discloses wherein the controller gradually moves the display of at least one of the predicted path and the predicted parking position on the monitor such that the display of at least one of the predicted path and the predicted parking position is always at the same position with respect to the image obtained by the image capturing means in accordance with a vehicle movement. (See Figures 3A-3F, 7A-7E)
- In regard to claim 5, Kuriya et al fails to disclose comprising predicted parking position display moving means for moving a display of the predicted parking position to the target parking space in the image obtained by the image capturing means on the screen of the monitor, through an operation conducted by the driver, and the controller updating the prescribed yaw angle based on a movement amount of the display of the predicted parking position which is moved by the predicted parking position display moving means and comparing the updated prescribed yaw angle with the yaw angle detected by the yaw angle detecting means to identify the current position of the vehicle and to provide the

guidance information for parking assistance. Okamoto discloses being able to move the display of the predicted parking position to the target parking space in the image obtained by the image capturing means on the screen of the monitor, through an operation conducted by the driver (Paragraph 57). Okamoto discussed creating the predicted path of the vehicle based upon the target parking space for the vehicle, however, is silent as to updating the yaw angle based on a movement amount of the display of the predicted parking position which is moved by the predicted parking position displaying moving means and comparing the updated prescribed yaw angle with the yaw angle detecting means to identify the current position of the vehicle and to provide the guidance information for parking assistance. With the yaw angle detecting means as taught by Kuriya, it would have been obvious to one having ordinary skill in the art at the time of the invention to set a yaw angle to provide guidance information and then compare the actual yaw angle with the yaw angle detecting means.

- In regard to claim 6, Okamoto, as discussed above, discloses a display moving means in order to change the position of the target parking position. In order to do this, it is inherent that there must be a movement amount storing means for storing the movement amount of the display of the predicted parking position which is moved by the predicted parking position display moving means, the controller displaying at least one of the predicted path and the predicted parking position based on the stored movement amount. If there was in way to store the movement amount, when the drive moved the display moving means to the

desired target parking position the device would be unable to provide guidance information to that position since it would be unable to remember where the position was.

- In regard to claim 8, Kuriya discloses wherein the controller displays at least one of the predicted path and the predicted parking position on the monitor so as to overlap with the image obtained by the image capturing means from a time when the parking assistance using the guidance information is started. (Page 4, paragraphs 19-20)
- In regard to claim 9, Kuriya discloses wherein the controller displays at least one of the predicted path and the predicted parking position on the monitor so as to overlap with the image obtained by the image capturing means from a time when the vehicle advances while maintaining a predetermined steering angle to reach a position where a reverse movement is started after parking assistance using the guidance information is started. (Page 10, paragraph 74 – page 14, paragraph 104)
- In regard to claim 10, Kuriya discloses the controller displays at least one of the predicted path and the predicted parking position on the monitor so as to overlap with the image obtained by the image capturing means before parking assistance using the guidance information is started (Figure 3A; Page 4, paragraph 19).
Also, the vehicle is stopped based on a degree of overlapping of at least one of the displayed predicted path and the displayed predicted parking position with the target parking space in the image to be guided to a position where parking

assistance using the guidance information is to be started. (Figure 7A; Page 10, paragraph 74 – page 14, paragraph 104)

- In regard to claim 11, Kuriya discloses wherein the controller provides the guidance information for parking the vehicle by advancing the vehicle from the position where the parking assistance is started while maintaining a predetermined steering angle, steering the vehicle in an opposite direction with the vehicle being stopped, and driving the vehicle backward while maintaining the predetermined steering angle. (Page 10, paragraph 74 – page 14, paragraph 104)
- In regard to claim 12, Kuriya discloses wherein the controller provides the guidance information for parking the vehicle by driving the vehicle backward from the position where the parking assistance is started while maintaining a predetermined steering angle. (Page 3, paragraphs 23-24)
- In regard to claim 13, Kuriya discloses wherein the controller provides the guidance information for parking the vehicle by advancing the vehicle while maintaining a predetermined steering angle to reach a position where a reverse movement is started, steering the vehicle in an opposite direction with the vehicle being stopped and driving the vehicle backward while maintaining the predetermined steering angle. (Page 10, paragraph 74 – page 14, paragraph 104)
- In regard to claim 14, Kuriya discloses wherein the controller calculates at least one of the predicted path and the predicted parking position in the case where

parking operations are conducted after parking assistance in accordance with the guidance information is started and before the vehicle reaches a position where a reverse movement is started, and displays at least one of the calculated predicted path and the calculated parking position on the monitor so as to overlap with the image obtained by the image capturing means, and the vehicle is stopped based on a degree of overlapping of at least one of the displayed predicted path and the displayed predicted parking position with the target parking space in the image to be guided to the position where the reverse movement is started. (Page 10, paragraph 74 – page 14, paragraph 104)

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuriya et al in view of Okamoto and further in view of Takagi et al (US 2003/0080877). Kuriya et al, discussed above, discloses a rear view image capturing means for capturing the image behind the vehicle (Page 7, paragraph 49), however, Kuriya et al fails to disclose a side image capturing means for capturing the image on a side of the vehicle. Kuriya et al does discuss the need to pick up the sides of the vehicle by using the rear camera to pick up the left and right sides of the rear and displaying such to the driver. Takagi et al discloses a side image capturing means. (See Figure 1) It would have been obvious to one having ordinary skill in the art at the time of the invention to include the side image capturing means disclosed by Takagi et al in order to modify Kuriya et al in order to provide a system which allows a vehicle to park in a variety of areas giving as much information as possible to the driver. (Takagi et al, Page 8, paragraph 88) Sugimoto et

al discloses a multi-functional on vehicle camera system and image display method for the same.

Allowable Subject Matter

5. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 5 and 6 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's arguments filed 8/1/06 have been fully considered but they are not persuasive in regard to claim 15. Claim 15 states having a side image capturing means and both Kuriya and Okamoto fail to disclose a side image capturing means, yet Tagaki et al is relied upon to disclose the side image capturing means. Tagaki et al uses a side image capturing means in order to be able to monitor all the way around the vehicle while trying to park the vehicle. Examiner respectfully disagrees that Tagaki et al teaches away from having a side image capturing means along with a rear image capturing means in a parking assistance apparatus.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marie A. Weiskopf whose telephone number is (571)

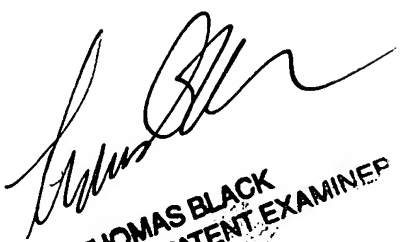
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272-6288. The examiner can normally be reached on Monday-Thursday between 7:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MW



THOMAS BLACK
SUPERVISORY PATENT EXAMINER